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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,543	12/30/2003	Frank Kilian	6570P012	8850

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EXAMINER	
PANTOLIANO JR, RICHARD	
ART UNIT	**PAPER NUMBER**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/749,543	KILIAN, FRANK	
	Examiner	Art Unit	
	Richard Pantoliano Jr	2194	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-33* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 30 December 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

WILLIAM THOMSON
SUPERVISORY PATENT EXAMINER

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This is the initial office action for Application# **10/749,543** filed on **30 December 2003**. **Claims 1-33** are currently pending and have been considered below.

Specification

2. The use of the trademark "JAVA" has been noted in this application. It should be capitalized wherever it appears and be accompanied by the generic terminology.

3. Although the use of trademarks is permissible in patent applications, the proprietary nature of the marks should be respected and every effort made to prevent their use in any manner which might adversely affect their validity as trademarks.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. **Claims 1, 2, 4, 6 – 12, 21, 23, 25, 26, 28, and 29** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

6. Software constitutes "functional descriptive material". Functional descriptive material consists of data structures and computer programs which impart functionality when employed as a computer component. Functional descriptive material is nonstatutory when claimed as descriptive material *per se*. *Warmerdam*, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium it becomes structurally and functionally interrelated to the

medium and will be statutory in most cases since use of technology permits the function of the descriptive material to be realized.

7. As to **Claim 1**, all of the components of the disclosed system can reasonably be construed to be software components in view of Applicant's disclosure. As such, **Claim 1** is directed to software *per se*, which is non-statutory subject matter.

8. As to **Claims 2, 4, 6-12, 21, 23, 25, 26, 28, and 29**, these claims suffer similar deficiencies to **Claim 1** and are therefore rejected for the same reasoning as applied to **Claim 1.**

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. **Claims 1-3, 6, 7, 9, 10, 13, 14, 16, 17, 19-23, 25, 26, and 28-33** are rejected under 35 U.S.C. 102(e) as being anticipated by Matena et al (US PGPub: 2005/0005200), hereinafter Matena.

11. As to **Claim 1,** Matena teaches the invention substantially as claimed including a system comprising:

a) a cluster having a first instance and a second instance, each of the first and second instances including a plurality of server nodes (para. [0078], [0083]);

b) a control logic to start each instance by initiating a launch logic for each of the server nodes, the launch logic, when initiated, to execute Java processes in each respective server node (para. [0114], [0123]-[0132], and [0413]); and

c) a communication interface coupled between the launch logic and the control logic to enable the launch logic to obtain status of each of the Java processes and enable the control logic to access the status via the communication interface (para. [0412]-[0413]).

12. As to **Claim 2,** Matena further teaches wherein the launch logic is provided to load a virtual machine and execute a Java process in the virtual machine (para. [0193]-[0196]).

13. As to **Claim 3,** Matena further teaches wherein the communication interface comprises: a shared memory to store the status of the Java processes (para. [0413]) (Since shared memory can be used to send the status messages to other nodes, those status messages must be stored in the shared memory, thereby meeting the claim limitation).

14. As to **Claim 6,** Matena further teaches wherein the control logic is provided to detect a failure of a Java process and to automatically restart the failed Java process (para. [0242]-[0248]).

15. As to **Claim 7,** Matena further teaches wherein the control logic is provided to generate an instruction to start, terminate or restart a particular process executed server nodes based on a command received from a remote device (para. [0139], [0208]-[0212], and [0231]-[0248]).

16. As to **Claim 9,** Matena further teaches wherein the control logic comprises: a signal handler to receive and interpret signals from a management console (para. [0220]-[0223]) (Subscribing to events inherently requires registering a message handler to receive the sent event messages).

17. As to **Claim 10,** Matena further teaches wherein the control logic comprises: a server connector to enable connection with an external server (para. [0417] and [0421]).

18. As to **Claim 13,** Matena discloses the invention substantially as claimed including a method comprising:

a) executing Java processes for a plurality of server nodes in an instance (108, Fig. 1);

b) obtaining status regarding the Java processes executed by the server nodes in the instance (para. [0214]);

c) storing the status regarding the Java processes in a communication interface (para. [0214] and [0220]-[0223]);

d) accessing the status in the communication interface (para. [0214] and [0220]-[0223]).

19. As to **Claim 14,** Matena further teaches enabling control of the Java processes based on an instruction received from a remote device (para. [0220]-[0223]) (The "JAC API" allows for control of an application, thereby meeting this claim limitation).

20. As to **Claim 16,** Matena further teaches;

a) detecting a failure of a process within the cluster by accessing the status in the communication interface (para. [0242]-[0248]); and

b) restarting the failed process (para. [0242]-[0248]).

21. As to **Claim 17,** Matena discloses the invention substantially as claimed including a machine-readable medium that provides instructions, which when executed by a processor cause the processor to perform operations comprising:

a) executing Java processes for a plurality of server nodes in an instance (108, Fig. 1);

b) obtaining status regarding each of the Java processes executed by the server nodes in the instance (para. [0214] and [0220]-[0223]); and

c) storing the status regarding the Java processes into a shared memory (para. [0214], [0220]-[0223], and [0413]).

22. As to **Claim 19,** Matena further teaches wherein the operations performed by the processor further comprise:

a) receiving instructions via a communication interface (para. [0139], [0208]-[0212], and [0231]-[0248]); and

b) starting, terminating or restarting a process based on the instructions received via the communication interface (para. [0139], [0208]-[0212], and [0231]-[0248]).

23. As to **Claim 20,** Matena further teaches wherein the operations further comprise: detecting a failure of a process within the cluster by accessing the status in the shared memory and automatically restarting the failed process (para. [0139], [0208]-[0212], [0231]-[0248], and [0413]).

24. As to **Claim 21,** Matena discloses the invention substantially as claimed including an apparatus comprising:

a) a cluster having a first instance and a second instance, each of the first and second instances including a plurality of server nodes (para. [0078], [0083]);

b) a control logic to start each respective instance by initiating a launch logic for each respective server node in the first and second instances (para. [0114], [0123]-[0132], and [0413]);

c) the launch logic, for each respective server node in the first and second instances, to further launch Java processes, and obtain a status of the Java processes (para. [0114], [0123]-[0132], and [0413]);

d) and the control logic to access the status obtained by the launch logic (para. [0242]-[0248]).

25. As to **Claim 22,** Matena further teaches a shared memory to enable exchange of information between the Java processes and the control logic (para. [0214], [0220]-[0223], and [0413]).

26. As to **Claim 23,** Matena further teaches wherein the launch logic loads a virtual machine and executes Java processes (para. [0193]-[0196]).

27. As to **Claim 25,** Matena further teaches wherein the control logic detects a failure of a process within the cluster; and automatically restarts operations of the failed process (para. [0139], [0208]-[0212], and [0231]-[0248]).

28. As to **Claim 26,** Matena further teaches a signal handler to receive a command from a remote device and controlling one of the Java processes based on the command received from the remote device (para. [0220]-[0223]) (Subscribing to events inherently requires registering a message handler to receive the sent event messages).

29. As to **Claim 28,** Matena discloses the invention substantially as claimed including a system comprising:

a) a cluster having a first instance and a second instance, each of the first and second instances including a plurality of server nodes (para. [0078], [0083]);

b) means for starting each instance by executing Java processes in each respective server node (para. [0114], [0123]-[0132], and [0413]); and

c) means for enabling exchange of information between the Java processes and the means for starting each instance (para. [0114], [0123]-[0132], and [0413]).

30. As to **Claim 29,** Matena further teaches a means for loading a virtual machine and execute a Java process in the virtual machine (para. [0193]-[0196]).

31. As to **Claim 30,** Matena further teaches wherein the means for enabling exchange of information comprises: a shared memory having a plurality of entries (para. [0413]).

32. As to **Claim 31,** Matena further teaches means for obtaining status for each of the Java processes; and means for updating the shared memory with the obtained status (para. [0214] and [0220]-[0223]).

33. As to **Claim 32,** Matena further teaches:

a) means for accessing the shared memory to monitor the status of each of the Java processes (para. [0413]) (Since shared memory is used for communication in the system, there must inherently exist a means for accessing said memory); and

b) means for sending an instruction to the launch means to start, terminate or restart a particular process executed in the cluster (para. [0139], [0208]-[0212], and [0231]-[0248]).

34. As to **Claim 33,** Matena further teaches:

a) means for enabling a user to monitor and control the Java processes running in the cluster from a management console coupled to the means for controlling (para. [0214] and [0220]-[0223]); and

b) means for enabling a connection with an external server (para. [0417] and [0421]).

Claim Rejections - 35 USC § 103

35. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

36. **Claims 4, 5, 8, 11, 12, 15, 18, 24, and 27** are rejected under 35 U.S.C. 103(a) as being unpatentable over Matena in view of Spender (US Pat: 6,823,358), hereinafter Spender.

37. As to **Claim 4,** Matena does not explicitly teach wherein the launch logic comprises a Java native interface to obtain the status of each of the Java processes

and to update the shared memory with the obtained status. However, since Matena discloses that the disclosed system can make use of shared memory in communicating information (para. [0413]), and since it is well known that Java does not allow for access native system resources within a computer system such as shared memory and named pipes without the use of the Java native interface, it is impliedly taught by Matena that the Java native interface is used to access the shared memory used for communication within the system.

38. If the above supplied reasoning is considered insufficient, Spender explicitly teaches wherein the Java native interface is used to access shared memory (col. 4, lines 38-48).

39. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Matena with the teachings of Spender. One would have done so in order to make the native resources of the operating system available to an executing Java application (Spender; Col. 4, lines 38-48)

40. As to **Claim 5,** Matena further teaches wherein the control logic accesses the shared memory to monitor the status of each of the Java processes ((para. [0214], [0220]-[0223], and [0413]).

41. As to **Claim 8,** Matena does not explicitly teach wherein the communication interface further comprises a named pipe to send and receive commands between the control logic and the launch logic.

42. Spender explicitly teaches wherein the Java native interface is used to access shared memory (col. 4, lines 38-48).

43. It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Matena with the teachings of Spender. One would have been motivated by the fact that Matena already suggested the use of shared memory in the disclosed system (para. [0413]), and since natively supported interprocess communication (IPC) mechanisms such as shared memory and named pipes are interchangeable, based on design choice, it would have been obvious to substitute any IPC mechanism for the shared memory proposed by Matena.

44. As per **Claims 11, 12 and 15,** this claim is rejected for the same reasoning as applied to **Claim 4** above.

45. As per **Claim 18**, being directed to a machine-readable medium encoded with instructions to perform the steps of the system of **Claim 4**, this claim is rejected for the same reasoning as applied to **Claim 4.**

46. As per **Claim 24**, being directed to an apparatus performing substantially the same function as the system of **Claim 4**, this claim is rejected for the same reasoning as applied to **Claim 4.**

47. As per **Claim 27**, being directed to an apparatus performing substantially the same function as the system of **Claim 8**, this claim is rejected for the same reasoning as applied to **Claim 8.**

Conclusion

48. The prior art made of record on the P.T.O. 892 that has not relied upon is considered pertinent to applicant's disclosure. Careful consideration of the cited art is required prior to responding to this Office Action, see 37 C.F.R. 1.111(c).

49. Examiner has cited particular columns and line numbers and/or figures in the references as applied to the claims for the convenience of the applicant. Applicant is reminded that rejections are based on references as a whole and not just the cited passages. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the cited art or disclosed by the examiner.

50. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard Pantoliano Jr whose telephone number is (571) 270-1049. The examiner can normally be reached on Monday-Thursday, 8am - 4 pm EST.

51. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Thomson can be reached on (571)272-3718. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

52. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RP
06/08/2007

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